

Reducing Delaware's Energy Usage

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Background Information

Energy Use:¹

Total Delaware energy use across all sectors in 2005 was 312.6 trillion BTUs. 1999 total Delaware energy use was 280 trillion BTUs.² Total energy use grew 11.6% over the 6 year period.

Per capita energy use was ~357 million BTUs in 1999, and 372 million BTUs in 2005, a growth of 4.2% over the 6 year period. US average 2005 per capita energy use was 339 million BTUs; Delaware ranked as the 19th largest per capita user of energy. States with the lowest and highest 2005 per capita energy use were:

Rhode Island	213 million BTU
New York	217 million BTU
California	232 million BTU
Wyoming	912 million BTU
Alaska	1,192 million BTU

2005 per capita use was lower than Delaware in all neighboring states:

Delaware	372 million BTU
Maryland	279 million BTU
New Jersey	315 million BTU
Pennsylvania	327 million Btu

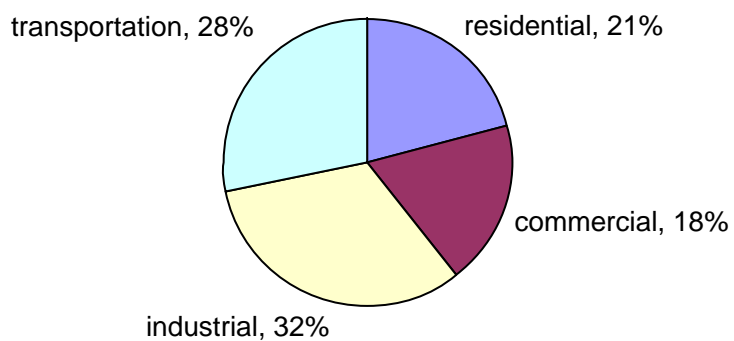
A note that should be made, Delaware's per capita figures are affected by refineries and power plants vs. the relatively small population.

As shown in the charts below, energy use by sector is similar between Delaware and the nation overall. In Delaware, less energy is used, relatively, for transportation, and more in the residential and industrial sectors. The change in Delaware between 1999 and 2005 were 3% increases in the percentage of energy used each in the residential and commercial sectors (from 20-23% residential and 16-19% commercial) and decreases in the percentages used industry and transportation (from 39-35% industrial use and 25-23% transportation).

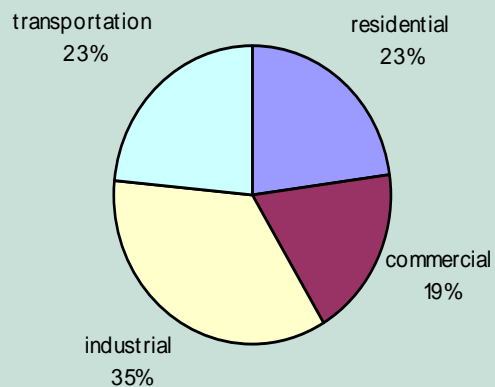
¹ Source: Energy Information Agency. US information:
http://www.eia.doe.gov/emeu/aer/pdf/pages/sec2_2.pdf. DE information:
http://tonto.eia.doe.gov/state/state_energy_profiles.cfm?sid=DE#Datum.

² The 2003 Energy Task Force utilized 1999 data, the most current at the time.

US Energy Use by Sector, 2006



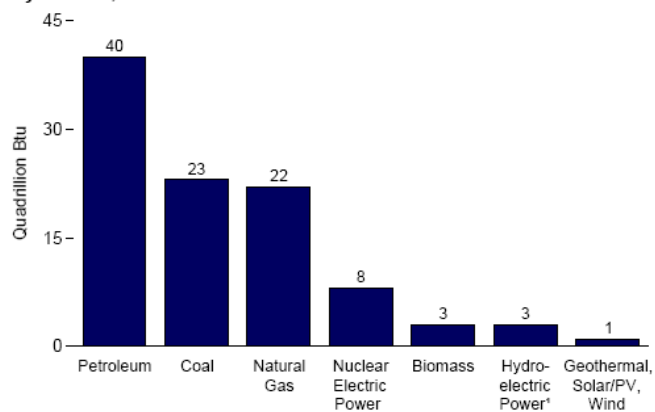
Delaware Energy Use by Sector, 2005



Energy use by Fuel Type:

US total energy use by fuel type is shown in the bar graph.³

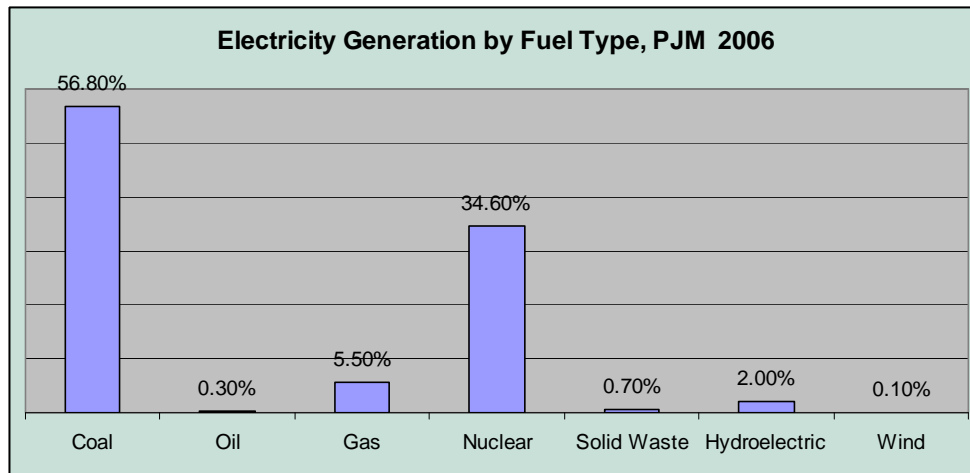
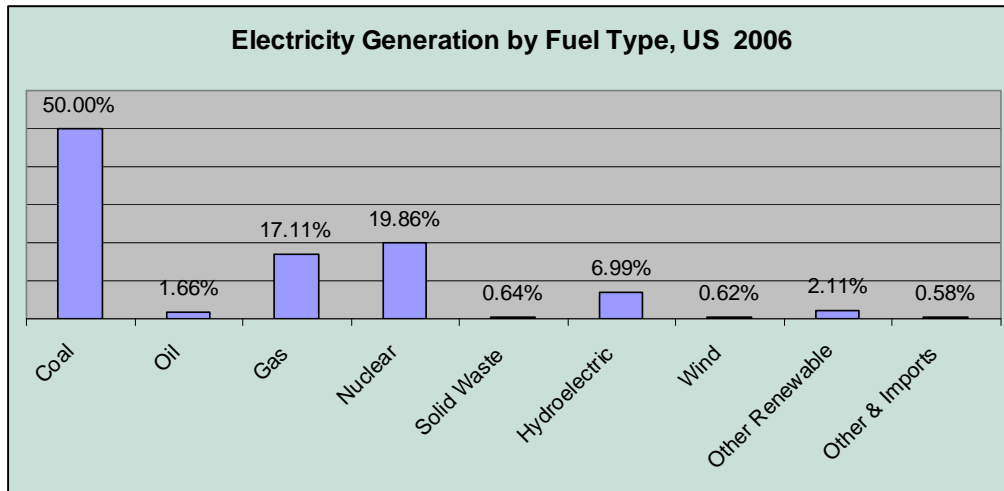
By Source, 2006



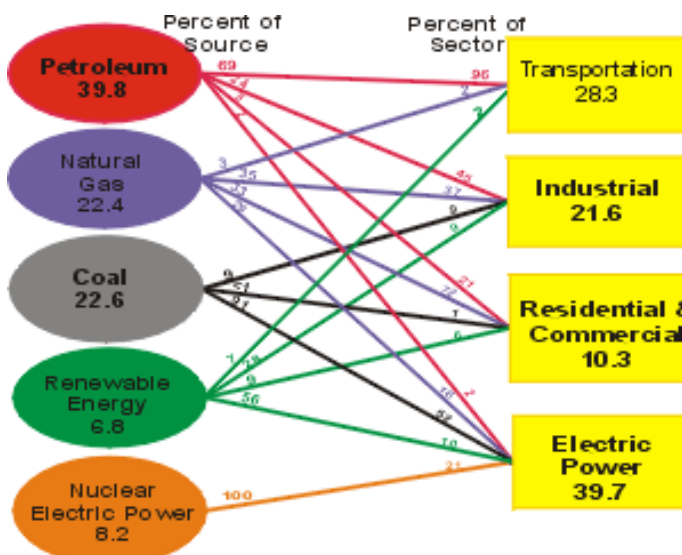
³ Source: http://www.eia.doe.gov/emeu/aer/pdf/pages/sec1_8.pdf

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The two graphs below focus on fuels used for electricity generation. They show the percentage of each fuel used nationally and in the PJM region, which supplies the electricity for Delaware.



Both charts show heavy reliance on coal for electricity generation, followed by nuclear and natural gas. In PJM, there is a much heavier use of nuclear generated electricity and less on natural gas than nationally. The PJM region also uses relatively less oil, hydroelectric and renewables in the mix of fuels.



This chart shows US primary energy consumption by source and sector in 2006 (quadrillion BTUs).⁴ The lines represent the percentages of fuel sent to the sector and percentage of the sectors fuel comes from that source. With the exception of nuclear power, which is only used for electricity generation, all fuels are used in each sector.

Energy Use Projections: ⁵

The 2003 *Bright Ideas for Delaware's Energy Future* report predicted that by 2010 there would be an 18.5% growth in electricity consumption and an 8.8 % growth in natural gas consumption.

Electricity (note: needs more analysis – to be done by work group)

Sales projections reflect kWh sold, thus representing changes in consumption and numbers of customers. A combination of all projections by all electricity distributors will be required to present the overall projected use changes in Delaware.

Delmarva Power:

Weather normalized sales fell 2.77% between 2003 and 2007, mainly due to reductions in industrial sales. Residential and commercial sales increased 8.3% over the period. Between 2003 and 2012, sales are projected to have grown 2.4% overall, with residential and commercial sales having increased 16.2% and continued reductions in industrial sales.

Delaware Electric Cooperative:

Sales have increased 22.5% between 2003 and 2007, and an average annual growth in sales of 4.9% is projected over the next five years (through 2012).

Monthly average residential consumption has increased from 1,165 to 1,178 kWh since 2003 (not weather normalized).

Delaware Municipal Electric Cooperative (DEMEC):

DEMEC sales increased 12% between 2003 and 2007, and an average overall growth of 4% growth is projected between 2007 & 2012

Natural Gas

Sales projections reflect MCF of natural gas sold, thus representing changes in consumption and numbers of customers. A combination of all projections by both companies will be required to present the overall projected use changes in Delaware.

Chesapeake Utilities:

Over the 2003 to 2007 period, sales have increased 7.9%. Sales projected for 2010 would represent a 30% increase from 2003 levels.

Delmarva Power:

Over the 2003 to 2007 period, sales have decreased 11%. A growth in sales of 1% is projected between 2007 and 2011.

⁵ Data supplied via e-mail by each company/organization.

Policy Changes Between 2003 and 2007:

Many of the recommendations in *Bright Ideas for Delaware's Energy Future* were implemented. An update on the status of the recommendations is attached to this paper.

The most significant changes impacting energy use and energy efficiency programs were creation of the Energy An\$wers program and the Sustainable Energy Utility:

- Energy An\$wers
In 2006, \$8 million was allocated to the Department of Natural Resources and Environmental Control for rebates for the purchase energy efficient appliances and equipment for both homes and businesses.
- Sustainable Energy Utility (SEU)
Created by the legislature in 2007, the SEU will use competitive markets and leveraged private-financing to deliver cost-effective end-use energy services that allow Delawareans to save 30% of their annual energy usage. The SEU will coordinate services that target residential, commercial, industrial, and transportation energy end-users in all energy markets, including electricity, heating fuels, green buildings, clean vehicles, customer-sited renewable energy, and affordable energy. The SEU will use competitively selected Implementation Contractors to deliver services utilizing performance based contracts.

Still in the formation stage, the SEU will become operational in the early part of this energy plan. Evaluation of its efficiency and impact will need to be incorporated into the plan.

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Key Questions to be Addressed by the Work Group:

1. What should Delaware's reduction goal be?
2. Will current approach achieve it?
3. What could/should be done additionally/differently?
4. How can efficiency be used to moderate price shocks or create more price stability over time?